The effect of job insecurity on employee health complaints: A within-person analysis of the explanatory role of threats to the manifest and latent benefits of work

1. Tinne Vander Elst; Research Group Work, Organizational and Personnel Psychology, University of Leuven, Belgium; & IDEWE, External Service for Prevention and Protection at Work, Belgium
2. Katharina Näswall; Department of Psychology, University of Canterbury, New Zealand
3. Claudia Bernhard-Oettel; Department of Psychology, Stockholm University, Sweden
4. Hans De Witte; Research Group Work, Organizational and Personnel Psychology, University of Leuven, Belgium; Optentia Research Focus Area, Vanderbijlpark, North-West University, South Africa
5. Magnus Sverke, Department of Psychology, Stockholm University, Sweden; Stockholm Stress Center, Stockholm University, Sweden; WorkWell Research Unit, North-West University, South Africa

Address correspondence: Tinne Vander Elst, Research Group on Work, Organizational and Personnel Psychology, University of Leuven, Tiensestraat 102, Box 3725, 3000 Leuven, Belgium; tel. +32 16 32 59 55; email: Tinne.VanderElst@ppw.kuleuven.be

Acknowledgements: The contribution of the first author was funded by a travel grant [grant number V407514N] and a grant for Postdoctoral Fellows [grant number 1297414N] from the Research Foundation - Flanders (FWO). The authors would like to acknowledge Yannick Griep for his assistance in the data analysis.

The effect of job insecurity on employee health complaints: A within-person analysis of the explanatory role of threats to the manifest and latent benefits of work

Abstract

The current study contributes to the literature on job insecurity by highlighting threat to the benefits of work as an explanation of the effect of job insecurity on health complaints. Building on the Latent Deprivation Model, we predicted that threats to both manifest (i.e., financial income) and latent benefits of work (i.e., collective purpose, social contacts, status, time structure, activity) mediate the relationships from job insecurity to subsequent mental and physical health complaints. In addition, in line with the Conservation of Resources Theory, we proposed that financial resources buffer the indirect effect of job insecurity on health complaints through threat to the manifest benefit. Hypotheses were tested using a multilevel design, in which three measurements (time lag of six months between subsequent measurements) were clustered within 1,994 employees (in Flanders, Belgium). This allowed for the investigation of within-person processes, while controlling for variance at the between-person level. The results demonstrate that job insecurity was related to subsequent threats to both manifest and latent benefits, and that these threats in turn were related to subsequent health complaints (with an exception for threat to the manifest benefit that did not predict mental health complaints). Three significant indirect effects were found: threat to the latent benefits mediated the relationships between job insecurity and both mental and physical health complaints, and threat to the manifest benefit mediated the relationship between job insecurity and physical health complaints. Unexpectedly, the latter indirect effect was exacerbated by financial resources.

Keywords: job insecurity, threat to manifest benefit of work, threat to latent benefits of work, mental and physical health complaints, financial resources, Latent Deprivation Model, Conservation of Resources Theory, multilevel mediation analysis

Working life is characterized by change and competition, reflected in phenomena such as restructurings, downsizings, temporary employment contracts and organizational financial difficulties. Not surprisingly, these objective characteristics may affect an employee's subjective perception that the current job is at stake (De Witte, Vander Elst, & De Cuyper, in press; Reisel, 2003), and such experience of job insecurity may, in turn, have negative consequences for his/her health (De Witte et al., in press; Sverke, Hellgren, & Näswall, 2002). The specific mechanisms linking threat of job loss to health complaints have not been widely investigated, but are nonetheless important in light of theory development regarding job insecurity outcomes and when designing interventions to prevent job insecurity from resulting in negative outcomes.

The current study aims to improve the understanding of the detrimental effects of job insecurity on employee health by investigating factors that may intervene in this relationship. Building on the Latent Deprivation Model (Jahoda, 1982), we firstly examine threats to the manifest and latent benefits of work as the explanatory mechanisms through which job insecurity results in reduced health (i.e., tests of mediation or indirect effects). Two general indicators of (reduced) health were selected as outcome variables, namely mental and physical health complaints. The current study extends the study of Selenko and Batinic (2013), who offered initial evidence for the mediating role of the manifest and latent benefits in the job insecurity−health relationship. While these authors focused on actual deprivation of the manifest and latent benefits, we investigate *threat* to the benefits of work. We believe this is better fit to the job insecurity context, where an employee still benefits from employment, but may experience threats to these benefits.

Secondly, this study also goes beyond the evidence presented by Selenko and Batinic (2013) by accounting for the possible moderating role of financial resources. Based on insights from the Conservation of Resources Theory (Hobfoll, 2001), we specifically

investigate whether financial resources buffer the relationship between job insecurity and threat to the manifest benefit, as well as the relationships between threat to the manifest benefit and both mental and physical health complaints.

Thirdly, as we are interested in processes underlying the effect of an employee's job insecurity on his/her health complaints over time, hypotheses are tested using data in which three half-yearly observations are clustered within persons. Specifically, we conduct multilevel analyses in which lagged within-person relationships (i.e., from predictors at one measurement point [time T-1] to endogenous variables at the next measurement point [time T]) are investigated. This approach illuminates changes and processes within individuals (Hayes, 2006; Voelkle, Brose, Schmiedek, & Lindenberger, 2014). The present study constitutes an important extension of previous research on the intervening mechanisms in the job insecurity−outcome relationship (e.g., Selenko & Batinic, 2013; Vander Elst, Van den Broeck, De Cuyper, & De Witte, 2014), which mainly has used between-person designs and thus investigated rank-order relationships and differences between individuals, rather than examining dynamic processes within persons over time.

The Indirect Effect of Job Insecurity on Health Complaints through Threat to the Benefits of Work

Job insecurity, defined as the perceived threat to the current job (Hellgren, Sverke, & Isaksson, 1999), has received increasing research attention during the last decades. Scholars agree that job insecurity is a *subjective* experience regarding an *involuntary* phenomenon that concerns *uncertainty* about the *future* (De Witte, 1999; Sverke et al., 2002). Based on the idea that the threat of job loss may have equally aversive consequences as job loss itself (Otto & Dalbert, 2013), it is considered as an important work stressor. Accordingly, job insecurity has been linked to both mental (e.g., irritation, anxiety, depressive feelings and emotional exhaustion) and physical health complaints (e.g., sleeping disorders, increased blood pressure

and headaches; for an overview, see De Witte et al., in press; for meta-analytical results, see Cheng & Chan, 2008, and Sverke et al., 2002). Given the consistent link between job insecurity and health complaints it is surprising that relatively little studies have empirically investigated the explanatory processes underlying the effect of job insecurity on employee health.

Based on the Latent Deprivation Model of Jahoda (1982), scholars proposed threats to both manifest and latent benefits of work as possible mechanisms explaining the negative consequences of job insecurity for employee well-being (e.g., De Witte, 1999; Otto & Dalbert, 2013). The Latent Deprivation Model states that, in addition to the more manifest benefit of getting an income to enable daily maintenance and activities, employment fulfills important latent benefits. Specifically, Jahoda (1982) presented the five latent benefits of collective purpose (i.e., the opportunity to make a meaningful contribution to society or a community), social contact (i.e., engaging in social activities outside the nuclear family), status (i.e., reflecting one's place in society and social recognition), time structure (i.e., structured and purposeful time use) and activity (i.e., engaging in organized/structured activities). Loss of these benefits may lead to psychological strain and affect an individual's health. In the context of job insecurity, one may similarly expect that the threat of job loss makes an employee fear that these benefits of work may be lost (De Witte, 1999; Otto & Dalbert, 2013; Selenko & Batinic, 2013). After all, having a job fulfills several important benefits (Jahoda, 1982), and the threat of job loss could directly imply a threat to these benefits of work. Threat to the benefits of work may further evoke psychological distress, resulting in reduced mental and physical health over time.

Only recently, Selenko and Batinic (2013) offered first evidence on the role of manifest and latent benefits in explaining the relationship between job insecurity and mental health. The authors tested whether such benefits of work mediated the job insecurity−mental

health relationship using a between-person, two-wave lagged design, but could not establish a mediation effect due to non-significant lagged effects of job insecurity on the manifest and latent benefits. Their cross-sectional analyses however showed that the relationship between job insecurity and mental health was mediated by financial benefits and time structure (evidence for mediation by time structure was only found at Time 2). Notably, Selenko and Batinic (2013) predicted that job insecurity leads to *actual* deprivation of the benefits of work, rather than to the *threat* of deprivation of these benefits in the future. However, linking job insecurity to threats to the manifest and latent benefits of work might be more appropriate. After all, a job-insecure employee still has employment and may therefore still have access to the manifest and latent benefits of work, which is most obvious with respect to the manifest benefit of having an income. Experiencing *threats* to the benefits of work, as a consequence of job insecurity perceptions, may however be enough to generate strain and worries resulting in increased mental and physical health complaints over time (Lazarus & Folkman, 1984). We therefore present the following mediation hypotheses:

Hypothesis 1: Threat to the manifest benefit of work mediates the relationship between job insecurity and mental (H1a) and physical health complaints (H1b), such that job insecurity has a positive lagged effect on threat to the manifest benefit, and threat to the manifest benefit has a positive lagged effect on mental and physical health complaints.

Hypothesis 2: Threat to the latent benefits of work mediates the relationship between job insecurity and mental (H2a) and physical health complaints (H2b), such that job insecurity has a positive lagged effect on threat to the latent benefits, and threat to the latent benefits has a positive lagged effect on mental and physical health complaints.

Financial Resources as a Moderator

In addition, when investigating threat to the manifest benefit of work in relationship to job insecurity and employee health, it seems important to take the potential influence of

financial resources into account. In the current study, financial resources refer to the degree to which an employee perceives (s)he has more than enough money with opportunities to save, as opposed to experiencing serious difficulties to get by financially (cf. McLoyd, Jayaratne, Ceballo, & Borquez, 1994). While threat to the manifest benefit reflects the fear of losing one's standard of living in the future, financial resources refer to the evaluation of one's current financial means. The Conservation of Resources Theory (COR; Hobfoll, 2001) offers a basis for formulating predictions regarding the role of financial resources. First, we predict that job insecurity leads to a smaller increase in threat to the manifest benefit of work when an employee experiences higher financial resources. Following COR, individuals strive to obtain, foster and protect valued resources, and may invest resources to minimize any threats of resource loss. Individuals may feel that they could rely on available resources (such as financial resources) to prevent that an initial threat of resource loss (e.g., job insecurity as the perceived threat to the current employment) leads to further threat of resource loss in the future (e.g., threat to the manifest benefit of work). Indeed, to provide in one's standard of living in the future, a person may either rely on employment and the associated monthly income, or on savings or other available financial resources. When the job is threatened, an employee may feel that it is possible to keep his/her standard of living even during times of unemployment, when (s)he can rely on financial reserves. In contrast, when an employee has low financial resources, (s)he may fear that a potential job loss could result in losing the manifest benefit of work, as (s)he does not have savings to compensate for a possible reduction in income in the future.

Second, financial resources may also moderate the relationship between threat to the manifest benefit and health complaints. We specifically predict that the impact of threat to the manifest benefit on employee health complaints is smaller when an employee has higher financial resources. This aligns with COR (Hobfoll, 2001), which states that resources may be

invested to offset the negative effects of stress complaints resulting from resources loss ('resource substitution'). When an employee has more financial resources, the perceived threat to the manifest benefit may be less stressful, as the employee can rely on financial savings. In contrast, when experiencing low financial resources, an employee may express more psychological distress in response to the threat to the manifest benefit, because (s)he cannot rely on financial reserves in case of job loss. Moreover, in line with COR, when having high financial resources, an employee may proactively cope with the threat to the manifest benefit by saving extra money and thus increasing his/her financial reserves even more. This is not the case when an employee experiences little financial latitude. Then, (s)he may rather try to protect the few financial resources available ('defensive responding'), for instance by reducing the expenses for healthy food, medical assistance and psychological aid. This may result in a greater decline in mental and physical health in the long term.

To our knowledge, no studies have investigated moderation by financial resources in the relationship between job insecurity and threat to the manifest benefit, or in the relationship between this latter variable and health complaints. Based on our theoretical argumentations, we therefore predict:

Hypothesis 3: The positive lagged effect of job insecurity on threat to the manifest benefit of work is moderated by financial resources, such that this effect is weaker in case of higher financial resources.

Hypothesis 4: The positive lagged effects of threat to the manifest benefit of work on mental (H4a) and physical health complaints (H4b) are moderated by financial resources, such that these effects are weaker in case of higher financial resources.

Note that we have not presented any predictions on the moderating role of financial resources in the relationships with threat to latent benefits, as financial resources are not

expected to directly protect against, nor entirely compensate for, threat to the latent benefits in the future in the eventual case of job loss (cf. Hobfoll, 2001).

Present Study

In sum, we predict that job insecurity results in increased mental and physical health complaints through threats to the manifest and latent benefits of work. In addition, we hypothesize that the effect of job insecurity on threat to the manifest benefit, as well as the effect of threat to the manifest benefit on health complaints is weaker in case of higher financial resources. This suggests the possible existence of a moderated mediation effect, in which the mediating effect of threat to the manifest benefit in the relationship between job insecurity and health complaints is buffered by financial resources. We therefore additionally predict:

Hypothesis 5: The indirect effects of job insecurity on mental (H5a) and physical health complaints (H5b) through threat to the manifest benefit of work are weaker in case of higher financial resources (i.e., test of moderated mediation).

The hypotheses were tested using three-wave data. This allowed us to investigate the lagged effects of job insecurity on threats to the manifest and latent benefits, and the lagged effects of threats to the benefits on health complaints. Additionally, the effect of the moderator financial resources could be tested across time. A time lag of six months between subsequent measurements was chosen, as this has been shown to be the time lag for which the effect of the benefits of work on mental health is the largest (e.g., Selenko, Batinic, & Paul, 2011). Moreover, we believe that a time lag of six months is long enough for changes to occur in the study variables and therefore to observe whether changes in one variable relate to changes in another factor, but not so long that changes in the work and personal environment confound the results (de Lange, 2005).

Method

Data Collection and Respondents

Data were collected among a heterogeneous group of employees in Flanders (Belgium) in April 2012 (T1), November 2012 (T2) and April 2013 (T3), thus with a time lag of approximately six months between subsequent measurements. At T1, readers of a Flemish Human Resources magazine—a platform for the broader public publishing vacancies and articles on work-related topics—were invited through the newspaper and the website of the magazine to participate in a large-scale survey on the impact of insecure work on workers' functioning. We emphasized the voluntary participation and the confidential treatment of the study results. Employees who completed the survey could respond to a contest question to win one of five vouchers for a multi-media store. Individuals without paid employment were directly diverted to the contest question to prevent them from filling out the survey questions. After closing the survey, answers of participants who filled out the questionnaire multiple times (determined based on e-mail address, a combination of background characteristics and IP address) were deleted. As the focus was on employees in the working age (18-65 years), self-employed workers and individuals outside the 18-65 years age span were omitted from the sample. This resulted in a group of 3,415 employees with complete answers at T1.

The majority of these respondents provided a correct email address at T1 (N = 2,223) and could be invited to the survey a second and a third time. At T2, 957 individuals initiated the survey (longitudinal response of 43.1%, relative to T1), and at T3, information was provided by 858 employees (longitudinal response of 38.6%, relative to T1). Following previous procedures (de Lange, 2005), we removed all participants who were unemployed at T2 and/or T3 (n = 70), as well as respondents who changed jobs between the measurements (n = 159) as job transitions may have influenced the lagged relationships. This resulted in a final sample of 1,994 employees who participated in the survey at least once (i.e., at T1). We did not exclude respondents who dropped out at T2 and/or T3 (i.e., listwise deletion), as this

would have resulted in a loss of information. Instead, we used the Full Information Maximum Likelihood (FIML) method to reduce response bias (Duncan, Duncan, & Strycker, 2006). As measurements were nested within persons in the longitudinal multilevel analyses, the unit of analysis was half-yearly observations instead of respondents. In total, 4,977 observations concerning the study variables were made (1,994 employees × a maximum of 3 measurements).

The final sample was a heterogeneous group of employees working in both the private (63.5%) and the public sector (36.5%), and in different types of branches (e.g., industry, retail, education, healthcare, IT). Respondents' mean age was 38.03 years (*SD* = 11.50) and the majority were female (64.3%). Eleven percent were blue-collar workers, 65.6% were white-collar workers and 23.8% were managers (i.e., supervisors and members of the board). Most of the respondents (88.0%) had a permanent (open-ended) contract, and many worked on a full-time basis (77.0%).

Dropout Analysis

A dropout analysis was performed to investigate whether dropout at T2 and/or T3 could be predicted by sociodemographic characteristics and the study variables at T1. We specifically performed a multinomial logistic regression analysis in which the participation pattern (i.e., (1) participation at T1, T2 and T3, n = 582; (2) participation at T1 and T2, n = 375; (3) participation at T1 and T3, n = 276; and (4) participation at T1, n = 990) was regressed on age, gender, occupational position, contract, full-time employment and sector, as well as on the six study variables at T1. The results showed that younger respondents dropped out more at T2 and/or T3 (participation at T1 in comparison with participation at T1, T2 and T3: B = -.03; *SE* = .01; $p < .001$; participation at T1 and T2 in comparison with participation at T1, T2 and T3: B = -.02; *SE* = .01; $p < .01$). In addition, respondents with more mental health complaints dropped out more at T2 and/or T3 (participation at T1 in comparison with

participation at T1, T2 and T3: B = .17; *SE* = .08; $p < .05$; participation at T1 and T2 in comparison with participation at T1, T2 and T3: B = .25; *SE* = .10; $p < .05$).

Measurements

All variables were measured at the three times using (a selection of) items from internationally validated scales.

Job insecurity. Job insecurity was measured with the four-item Job Insecurity Scale by De Witte (2000), validated by Vander Elst, De Witte and De Cuyper (2014). An item is "I think I will lose my job in the near future". The items were rated on a five-point Likert-type scale from 1 (*totally disagree*) to 5 (*totally agree*). The Cronbach's alpha's were .87, .89 and .90 for T1, T2 and T3, respectively.

Threat to the benefits of work. *Threat to the manifest benefit* was measured with a four-item scale presented by Meireman, Meuleman, Billiet, De Witte and Wets (2004). Item examples are "I think I will have to cut down on household spending in the following years" and "I occasionally fear that I will lose financially in the following years". This scale was reliable at all times (Cronbach's alpha of .87, .88 and .89 for T1 to T3, respectively). In order to measure *threat to the latent benefits*, we selected one item of each subscale of the Latent and Manifest Benefits scale (LAMB scale; Muller, Creed, Waters, & Machin, 2005) reflecting latent benefits, based on the size of the factor loadings reported in Muller et al. (2005) and the face validity of the single items. We then adapted the formulation of these items so that they measured 'threat' to, rather than actual deprivation of/satisfaction with the latent benefit. This resulted in a five-item scale, of which "I fear that I will not be valued by the people around me in the near future" (reflecting the latent benefit of status) is an example. Reliabilities were .75, .71 and .74 for T1, T2 and T3, respectively. All threat-to-benefit items were rated on a five-point scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). Note that the original items of (the threat to) the benefits scales were formulated rather generally, independently of

work, so they could be used in different populations (e.g., unemployed and employed individuals; Meireman et al., 2004; Muller et al., 2005). Although other factors than work may satisfy these benefits, it is particularly work that is important in fulfilling them (Jahoda, 1982). Hence, we labelled the scales as threat to the benefits *of work* (following, e.g., Muller et al., 2005; Selenko & Batinic, 2013).

Health complaints. *Mental health complaints* were measured using the five-item Mental Health Inventory by Berwick et al. (1991). An example item is "How much of the time, during the past month, have you felt downhearted and blue?". Respondents rated these items on a scale from 1 (*never*) to 5 (*always*). This scale was reliable (Cronbach's alpha's of .83, .85 and .83 for T1, T2 and T3, respectively). *Physical health complaints* were measured using four items from the General Health Scale by Ware (1999). An item is "I seem to get sick a little easier than other people". The items were rated on a scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). Cronbach's alpha coefficients were .79, .80 and .82 for the three times, respectively.

Financial resources. Financial resources was measured using a single item from Meireman et al. (2004): "If you consider the total income of your family, can you cover your necessary expenses in a satisfactory way?". The question was answered by choosing one of the following response options: (1) "We don't have enough and have very great difficulties to get by"; (2) "We don't have enough and have difficulties to get by"; (3) "We just have enough to get by without difficulties"; and (4) "We have more than enough, we can even save up".

Analyses

A multilevel modelling approach was chosen because of the hierarchical format of our data, in which measurements were clustered within persons. Intra-class coefficient (ICC) values of the study variables showed that the variance in the study variables was attributed to both within- and between-person differences (ICC values for job insecurity, threat to manifest

benefit, threat to latent benefits, mental health complaints, physical health complaints and financial resources were .74, .73, .65, .70, .73 and .71, respectively), and thus supported the use of multilevel analysis (Hayes, 2006). Analyses were conducted using a multilevel path modelling framework, in which within-person mediation and moderation effects were estimated (cf. Preacher, Zyphur, & Zhang, 2010), by means of MPlus 7.11 (Muthén & Muthén, 2013). Relationships were thus investigated at the lower or within-person level, while controlling for variation in the variables at the between-person level (i.e., we estimated the variances at the between-level). After all, we were interested in the explanatory intra-individual processes underlying the relationship between job insecurity and health complaints.

To examine the direction of the lagged relationships between variables, we investigated relationships of the endogenous variables with their predictors at a previous time of measurement. We thus investigated relationships between time-*lagged* predictors reflecting values of the predictors at a previous measurement 'time T-1' and endogenous variables measured at 'time T' (Bliese & Ployhart, 2002; Singer & Willet, 2003; see Griep, Vantilborgh, & Pepermans, 2014, for an example of a study in which a similar methodology was used). Specifically, for each study construct, a time-varying variable (i.e., 'time T' variable) was constructed by stacking measurements from T1, T2 and T3 within persons. The lagged variables (i.e., 'time T-1' variable) were calculated by recoding the time-varying variables so that their coding at a certain time reflect values at a previous measurement point (Singer & Willet, 2003). When investigating the lagged relationships between variables, we controlled for baseline values of the endogenous variables. Hence, we investigated predictors of across-time changes in the study constructs.

Prior to the hypothesis testing, to investigate whether the direction of the temporal relationships was as hypothesized (i.e., from job insecurity to health complaints through threat to the benefits), different temporal models were compared (Taris & Kompier, 2014): (1) a

stability model in which each variable (time T) was linked to its lagged counterpart (time T-1); (2) a stressor-to-strain model with stabilities (i.e., the auto-correlation between corresponding time T-1 and time T variables) and paths from job insecurity at time T-1 to threat to manifest benefit, threat to latent benefits, mental health complaints and physical health complaints at time T, and from threat to manifest benefit and threat to latent benefits at time T-1 to mental health complaints and physical health complaints at time T; (3) a strain-stressor model with stabilities and reversed paths from mental and physical health complaints to job insecurity via threat to the benefits; and (4) a reciprocal model combining the paths from the previous models. Exogenous variables were grand mean centered (Preacher et al., 2010), and all variables were allowed to covary with each other at time T.

The hypotheses were tested in three steps. First, we tested for *mediation* (Hypotheses 1 and 2) by running the lagged stressor-to-strain model (see above), in which we additionally controlled for contemporaneous mediation relationships among the time T variables, following the recommendations of MacKinnon (2008). Threats to manifest and latent benefits were allowed to covary at time T, as were mental and physical health complaints. Indirect effects were calculated by multiplying the lagged relationship between job insecurity and the mediator with the lagged relationship between the mediator and the outcome under consideration.

Second, we tested for *moderation* (Hypotheses 3 and 4) by adding predictors to the mediation model: financial resources and the interaction term 'job insecurity*financial resources' (time T-1) were added as predictors of subsequent threat to manifest benefit (time T), and financial resources and the interaction term 'threat to manifest benefit*financial resources' (time T-1) were included as predictors of subsequent mental and physical health complaints (time T). Again, all predictors were grand-mean centered, and the interaction terms were calculated based on these centered variables (Aiken & West, 1991). Note that we

also added contemporaneous moderation relationships to the model, that is, from the moderator and the interaction terms at time T to their respective outcomes at time T. Further, job insecurity was allowed to covary with financial resources.

Third, in case of a significant lagged moderation effect of financial resources, we tested for mediation for different values of the moderator capturing the full range of the moderator (i.e., test of *moderated mediation*; Hypothesis 5).

All structural models were tested using the Maximum Likelihood estimator with Robust standard errors (MLR) and the −2 Log Likelihood (−2LL) difference test was used to compare nested models (Hayes, 2006). Note that, in MPlus, the MLR estimator does not provide fit indices such as the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA) for multilevel models.

Results

Preliminary Analyses: Descriptive Statistics and Construct Validity of the Measurements

Table 1 shows the means, the standard deviations and the inter-correlations at the between-person level, as well as the correlations at the within-person level.

[Table 1]

The construct validity of the study scales was evaluated through a series of multilevel Confirmatory Factor Analyses (CFAs), in which the hypothesized measurement model was tested and compared with different alternative measurement models. The Mean- and Variance-adjusted Weighted Least Square (WLSMV) estimator was used, as not all measurement models converged when using the MLR estimator. The WLSMV estimator provides the Standardized Root Mean Square Residual-within fit index (SRMR-within), based on which the fit of the measurement models at within-person level could be evaluated (Hox, 2010). SRMR-within values lower than .05 indicate good fit (Dyer, Hanges, & Hall, 2005).

The hypothesized measurement model with six latent factors (job insecurity, threat to manifest benefit, threat to latent benefits, mental health complaints, physical health complaints and financial resources; SRMR-within = .03) showed a better fit than (1) a five-factor measurement model in which threat to manifest and latent benefits were taken together (SRMR-within = .05), (2) a five-factor measurement model in which mental and physical health complaints were taken together (SRMR-within = .05), and (3) a one-factor model in which the items of all scales loaded on the same latent factor (SRMR-within = .09). This supported the expected dimensionality of the study scales, which were used as input of the analyses to test the hypotheses.

Direction of Temporal Relationships

Comparison of the four temporal models testing the direction of the relationships revealed that the stressor-to-strain model fitted the data better than the stability model ($\Delta -2LL(8) = 31.02$, $p < .001$). The strain-to-stressor model, however, did not show a better fit compared to the stability model ($\Delta -2LL(8) = 12.34$, *ns*). Next, the reciprocal model did not show a better fit than the stressor-to-strain model ($\Delta -2LL(8) = 11.60$, *ns*), but improved model fit compared to the strain-to-stressor model ($\Delta -2LL(8) = 30.28$, $p < .001$). These results demonstrate that the stressor-to-strain model was superior, meaning that the temporal relationships go in the hypothesized direction, that is, from job insecurity to threat to the benefits of work, and from job insecurity and threat to the benefits to health complaints.

Test of the Hypotheses

We first tested the mediation model in which the indirect effects of job insecurity on mental and physical health complaints through threats to manifest and latent benefits were tested. The results, displayed in Figure 1, show that job insecurity (time T-1) was related to an increase in both threat to the manifest benefit and threat to the latent benefits six months later (time T). Next, threat to the latent benefits at time T-1 predicted both mental and physical

health complaints at time T, whereas threat to the manifest benefit at time T-1 only predicted physical health complaints at time T. We found a significant indirect effect of job insecurity on physical health complaints via threat to the manifest benefit ($B_{unstandardized}$ = .04, p = .023). However, threat to the manifest benefit did not mediate the relationship between job insecurity and mental health complaints ($B_{unstandardized}$ = .03, *ns*). Next, threat to the latent benefits mediated the effect of job insecurity on both mental ($B_{unstandardized}$ = .08, $p < .001$) and physical health complaints ($B_{unstandardized}$ = .07, $p < .01$). Hence, Hypotheses 1 was partly supported, while Hypothesis 2 was fully supported. Note that we did not find any direct effects of job insecurity on mental and physical health complaints, after controlling for threats to the manifest and latent benefits of work.

[Figure 1]

Second, we added the moderator and interaction terms to the mediation model (i.e., moderated mediation model; see Figure 2), which improved the model fit ($\Delta -2LL(25)$ = 31135.15, $p < .001$). We found a significant moderating effect of financial resources (time T-1) on the lagged relationship between job insecurity (time T-1) and threat to manifest benefit (time T). Contrary to our predictions (Hypothesis 3), however, the interaction was positive, implying that the effect of job insecurity on subsequent threat to the manifest benefit was larger when an employee had more financial resources. In contrast to Hypothesis 4, there was no moderating effect of financial resources (time T-1) on the relationship between threat to the manifest benefit (time T-1) and subsequent mental and physical health complaints (time T).

[Figure 2]

Plotting the interaction between job insecurity and financial resources (time T-1) in predicting subsequent threat to the manifest benefit (time T) revealed the following pattern, as shown in Figure 3. Under the condition of high financial resources (+1 *SD*), an individual

experiencing high (as opposed to low) levels of job insecurity (+1 *SD*) experienced a larger increase in threat to the manifest benefit six months later ($B_{unstandardized}$ = .49, *t*-value = 21.66, $p < .001$). The effect of job insecurity on threat to the manifest benefit in the future was however weaker when an individual experienced low financial resources (−1 *SD*; $B_{unstandardized}$ = .24, *t*-value = 14.62, $p < .001$). Figure 3 shows that, when having high financial resources, the experienced threat to the manifest benefit after feeling job-insecure approximated the level of threat to the manifest benefit when experiencing low financial resources (regardless of the level of previous job insecurity).

[Figure 3]

Since we found evidence for moderation, in the final step of the analyses, we investigated whether the indirect effects of job insecurity on mental and physical health complaints through threat to the manifest benefit were conditional upon a range of values of financial resources (i.e., test of moderated mediation; see Table 2 for a summary of the results). We found that, for most values of financial resources, job insecurity indirectly affected physical health complaints through threat to the manifest benefit. The size of the indirect effect decreased when levels of financial resources were lower. Under low levels of financial resources (i.e., −3.5 *SD*, −3 *SD*, −2.5 *SD*, and −2 *SD*), the indirect effect of job insecurity on physical health complaints through threat to the manifest benefit was no longer significant. Further, threat to the manifest benefit did not mediate the relationship between job insecurity and mental health complaints, regardless of the level of financial resources. We thus found evidence for a moderated mediation effect regarding physical health complaints, however in the opposite direction to what was predicted in Hypothesis 5: the indirect effect of job insecurity on physical health complaints through threat to the manifest benefit of work increased when levels of financial resources were higher.

[Table 2]

Discussion

The current study aimed to shed light on the intra-individual processes through which job insecurity affects mental and physical health over-time. It contributes to the literature on job insecurity in multiple ways. First, building on the Latent Deprivation Model (Jahoda, 1982), we highlighted the role of threats to both manifest and latent benefits of work in explaining the lagged relationships between job insecurity and mental and physical health complaints. In doing so, we extend the work of Selenko and Batinic (2013), who offered initial evidence on this topic, but focused on *actual* deprivation of the benefits of work, rather than on *threats* to the benefits. Threats (e.g., threat to the benefits of work) can be conceptually distinguished from actual losses (e.g., deprivation of the benefits), but may be equally aversive for an employee's well-being (Lazarus & Folkman, 1984). Second, we investigated the moderating role of financial resources in the relationships between job insecurity and threat to the manifest benefit of work, as well as between such threat and health complaints. Accordingly, we tested a key tenet of Hobfoll's Conservation of Resources Theory (COR; 2001) that in case of (threat of) resource loss, resources may be invested to protect against further (threat of) resource loss and to offset stress reactions. Third, we tested all relationships using a multilevel design, in which three half-yearly measurements were clustered within individuals. This allowed for the investigation of possible explanatory processes underlying the effect of an individual's level of job insecurity on changes in his/her health complaints in the future (i.e., within-person processes). Previous studies investigating mediating processes underlying the job insecurity−outcome relationships have mainly used between-person designs, which fail to account for intra-individual processes. Instead, using a between-person design, one can examine whether differences between persons in one construct are related to differences between persons in another construct. This may however

be less appropriate when investigating predictors of changes in employees' individual health outcomes (Voelkle et al., 2014).

The results of the current study demonstrate that job insecurity was positively related to increased threats to the manifest and latent benefits of work over time. Threat to the manifest benefit and threat to the latent benefits were in turn positively related to elevated levels of physical health complaints, while only threat to the latent benefits was related to increased mental health complaints. We found significant indirect effects of job insecurity on physical health complaints via threats to the manifest and latent benefits of work, and of job insecurity on mental health complaints through threat to the latent benefits. These results can be understood based on the Latent Deprivation Model (Jahoda, 1982), which describes how unemployment may lead to the deprivation of important manifest and latent benefits of work, which in turn may lead to health complaints. In line with this, an employee who fears losing his/her job may likely anticipate losing important benefits related to the job (De Witte, 1999; Otto & Dalbert, 2013). As a threat of loss may have equally negative consequences as the loss itself (Lazarus & Folkman, 1984), we may expect that threats to the benefits of work may affect an individual's distress over time, for instance reflected in elevated levels of mental and physical health complaints. The present research extends the study of Selenko and Batinic (2013), who provided initial evidence on the mediating role of the manifest and latent benefits of work in the relationship between job insecurity and mental health. Selenko and Batinic however did not find any lagged relationship between job insecurity and deprivation of the benefits of work. Our study may offer an explanation for this lack of relationship: in contrast to Selenko and Batinic (2013), we investigated and demonstrated that job insecurity leads to an increase in *threat* of the deprivation of the benefits of work, rather than to increased *actual* deprivation of these benefits. We believe that this approach, namely focusing on threats to the benefits of work, fits the definition and the context of job insecurity better. After all, job-

insecure employees still have employment and may therefore still take advantage of the manifest and latent benefits of work, even if they feel that these benefits are threatened.

Next, we found a significant moderating effect of financial resources on the lagged relationship between job insecurity and threat to the manifest benefit of work. The direction of this moderation effect was different than expected, however: job insecurity was more strongly related to threat to the manifest benefit six months later under conditions of more financial resources. The results show that an employee experiencing more financial resources suffers equivalent in a job-insecure situation compared to a situation in which (s)he is experiencing less financial resources. Additionally, the tests of moderated mediation showed that the indirect effect of job insecurity on physical health complaints via threat to the manifest benefit was larger for higher levels of financial resources. No indirect effect was found when an individual experienced low financial resources. This means that an employee who experienced higher levels of job insecurity reported increased physical health complaints over time, because (s)he feared for the possible loss of his/her standard of living, but only when (s)he had financial resources to some degree. These findings do not align with the Conservation of Resources Theory (COR; Hobfoll, 2001), suggesting that in case of (threat of) resources loss, other resources can be invested to protect against further (threat of) resource loss. In contrast, the results of this study seem to suggest that when an individual lacks resources (i.e., has low financial resources), (s)he does not increasingly fear losing them (i.e., threat to the manifest benefit of work) as a result of prior threats of resource loss (i.e., job insecurity). These results may point to a 'bottoming effect': for those with low financial margins, the budget is already tight and there is not much more to lose in case the job is gone, resulting in a relatively stable perceived threat to the manifest benefit over time. However, when an individual has more access to financial resources, (s)he has more to lose and may increasingly fear having to make changes to the standard of living (i.e., threat to the manifest

benefit) as a result of a threat of future job loss (i.e., job insecurity). Although these findings are contrary to our initial expectations, they are similar to results in previous research indicating that the relationship between job insecurity and low well-being is weaker among individuals with a temporary versus permanent contract (De Cuyper & De Witte, 2007). This can be explained by temporary workers not expecting job security and therefore not having much to lose when experiencing job insecurity. Permanent workers, on the other hand, expect job security and therefore job *in*security "represents an unwelcome change in their psychological contract" (De Cuyper & De Witte, 2007, p. 68) resulting in decreased well-being. Employees having more resources in terms of a permanent contract may thus suffer more from job insecurity. As, to our knowledge, the present study is the first one to provide similar results in the particular context of financial resources and threat to the manifest benefit, further research is needed to replicate our findings.

In addition to the unexpected direction of the moderating effect of financial resources, there were two other unexpected findings in this study. First, we did not find a lagged relationship from threat to the manifest benefit to mental health complaints. This finding does not correspond with previous studies on the relationship between deprivation of the manifest benefit and mental well-being (e.g., Paul, Geithner, & Moser, 2009; Selenko et al., 2011). Paul et al. (2009), for instance, found that manifest deprivation positively related to depression, after controlling for the effect of latent deprivation. A possible explanation for this distinction is that we investigated intra-personal processes, while previous studies have focused on between-person processes. Moreover, we statistically controlled for physical health complaints, whereas most previous studies linking deprivation of the benefits of work to mental health have not taken physical health into account. Finally, we focused on threat of the deprivation of the manifest benefit instead of manifest deprivation as such. Future studies may focus on these points of difference and should replicate our findings.

Second, we did not find a moderating effect of financial resources on the relationship between threat to the manifest benefit and mental and physical health complaints. This means that financial resources could not compensate for the perceived threat of losing one's standard of living in the future. Our findings indicate that an employee who experiences a threat to the manifest benefit of work is still likely to report increased physical health complaints six months later, regardless of his/her financial resources. This does not correspond to COR (Hobfoll, 2001), in which it is stated that an individual may invest resources (e.g., financial resources) to offset stress complaints (e.g., health complaints) as a result of the loss or threat of other resources (e.g., threat to the manifest benefit of work).

Interestingly, although not the focus of this study, we did find evidence for a conceptual distinction between (threat of) resource *loss*, and *lack* (as opposed to the availability) of resources, as advanced in COR. While we found an effect of threat to the manifest benefit (indicative of a threat of resource loss) on physical health complaints, financial resources (indicative of the availability of resources) did not predict physical health complaints. This suggests that the threat of losing one's standard of living in the future may be more negative than the lack of current financial resources to get by in terms of its effects on physical health complaints.

Limitations and Avenues for Future Research

This study has some limitations. First, all study variables were measured using self-reports and hence common method bias might be a concern. Objective measurements of mental and physical health (e.g., ratings by a physician) may be used to avoid this problem in future research. We nevertheless tried to reduce the risk for common method bias by highlighting the voluntary character of the survey and the anonymous treatment of the study results, by using (items from) internationally validated measurements of which the construct validity was demonstrated by means of multilevel CFAs, and by using a lagged design in

which we investigated relationships between variables that were separated in time (Conway & Lance, 2010).

Second, based on previous studies (e.g., Selenko et al., 2011), a time lag of six months between subsequent measurements was chosen. Although we found significant lagged paths from job insecurity to threats to both manifest and latent benefits of work, it could also be expected that job insecurity affects threat to the benefits of work in the shorter term. After all, it may not take six months before a job-insecure employee sorts out the consequences of a possible job loss for the manifest and latent benefits fulfilled by work. Future studies using different time lags or taking time into account as a predictor in the analyses (e.g., latent growth modelling), may increase the knowledge on this matter.

Third, the results of the dropout analysis showed that dropout rate at T2 and/or T3 was higher among younger employees and employees with higher scores on mental health complaints. These results are not surprising, given that older persons are more conscientious (Srivastava, John, Gosling, & Potter, 2003). In addition, the finding that employees with more mental health complaints dropped out more can be explained by the fact that those employees have less mental and cognitive resources to invest, for instance, in filling out a survey (Hobfoll, 2001). We believe that the dropout effects regarding age may have led to an underestimation of the indirect relationship between job insecurity and health complaints via threat to the benefits of work, as older employees may have better emotion regulation strategies (Carstensen, Fung, & Charles, 2003) and may thus emotionally cope with the perceived threat to the current job and to the benefits of work better. However, the higher dropout among younger workers may also have led to an overestimation of the relationships under study, as the experience of job insecurity may be worse for older employees, as their chances to find another job at the labour market may decrease (Conens, Henkens, & Schippers, 2012). In addition, the higher dropout among persons with more mental health

complaints may have resulted in a healthy worker bias (e.g., Virtanen, Vahtera, Kivimäki, Pentti, & Ferrie, 2002): the relationship between job insecurity and health complaints via threat to the benefits of work can be expected to be stronger if persons with more mental health complaints had not dropped out. An additional sensitivity analysis, in which the mediation and the moderated mediation models were tested separately among respondents scoring low on mental health complaints (lower than mean score) and among respondents scoring high (mean score or higher), partially supported this assumption. In the mediation model, the lagged relationships from job insecurity to threat to the latent benefits (low: $\beta = .18$, $p < .01$; high: $\beta = .27$, $p < .001$), from threat to the manifest benefit to physical health complaints (low: $\beta = .05$, *ns*; high: $\beta = .15$, $p < .05$), and from threat to the latent benefits to mental health complaints (low: $\beta = .08$, *ns*; high: $\beta = .19$, $p < .001$) were stronger for the group scoring high on mental health complaints, while the other hypothesized relationships did not differ to any significant degree between both groups. This resulted in a larger indirect effect from job insecurity to physical health complaints via threat to the manifest benefit (low: $B = .01$, *ns*; high: $B = .05$, $p < .01$), and from job insecurity to mental health complaints via threat to the latent benefits (low: $B = .02$, *ns*; high: $B = .07$, $p < .01$) among individuals scoring high on mental health complaints. In the moderated mediation model, the hypothesized interaction terms did not differ between the respondents scoring low and high on mental health complaints. These results suggest that the higher drop-out among employees with more mental health complaints may have led to an underestimation of the mediation effects, but not of the moderation effects.

In this study, we acknowledged the importance of threats to the manifest and latent benefits of work as important predictors of individuals' health, and examined their mediating effect in the job insecurity−health relationship while controlling for the other type of benefits (cf. Paul et al., 2009). As each latent benefit was measured with only one item, all different

types of latent benefits were grouped together into one reliable general threat-to-latent-benefits scale. A fruitful path for future research may however be to investigate the mediating role of threats to all latent benefits separately, using comprehensive multi-item measures (e.g., LAMB scale; Muller et al., 2005), in order to investigate which latent benefits are particularly perceived as threatened as a result of job insecurity and may account of the negative effects of job insecurity.

Fifth, we did not differentiate between cognitive and affective threat evaluations in the current study. While job insecurity and threat to the manifest benefit were generally measured using both cognitive ("I think) and affective items ("I fear"), the threat to the latent benefits scale only consisted of affective items. Some job insecurity scholars have, however, indicated an empirical distinction between cognitive and affective job insecurity (e.g., Pienaar, De Witte, Hellgren, & Sverke, 2013). An interesting path for future research would be to investigate whether cognitive and affective job insecurity relate differently to threat to the benefits of work. Similarly, it may also be explored whether a differentiation can be made between cognitive and affective threats to the benefits of work, and whether these types have different antecedents and outcomes.

Analogous to the finding that financial resources moderated the relationship between job insecurity and threat to the manifest benefits of work, one may argue that social resources may moderate the relationship with threat to the latent benefits of work. After all, in times of job insecurity, an individual may rely on his/her actual social resources (e.g., social support from family and friends, access to sport group) to protect against the threat of losing the latent benefits of work (e.g., social contact, activity). In addition, it is possible that social resources may have a moderating effect on the relationship between job insecurity and threat to the manifest benefit, indirectly via financial resources: a good support system may also provide financial support. Similarly, financial resources may moderate the relationship between job

insecurity and threat to the latent benefits of work as it enhances one's social resources: having a lot of money may for instance increase an individual's possibility to engage in social activities (e.g., going to the gym). It was beyond the scope of the present paper to test this, but an avenue for further research would therefore be to investigate the possibly differential roles of financial and social resources in moderating the relationship between job insecurity and both threat to the manifest benefit and threat to the latent benefits of work. In addition, we measured financial resources in a rather general way, but both financial and social resources may be multidimensional in nature. Future research may therefore benefit from examining the differential moderating roles of different types of financial (e.g., resources to provide in basic need such as food, resources to provide in material resources) and social resources (e.g., instrumental support from family, social support from friends) (cf. Price, Choi, & Vinokur, 2002).

Practical Considerations

This study demonstrates that when an employee fears losing his/her job, over-time (s)he will also fear to lose important benefits fulfilled by work, such as getting an income to enable daily maintenance and activities (manifest benefit), as well as social contacts, status and time structure (examples of latent benefits). Threats to these benefits of work may in turn increase an employee's mental and physical health complaints. As feelings of job insecurity often cannot be prevented, policy makers may use these insights to forestall job insecurity from resulting in negative outcomes in the long run. Specifically, policy makers may try to decrease the perceived threat of losing the benefits of work, for instance, by informing employees about existing national and regional support systems in the potential case of job loss in the future. Such support systems may concern the national social security system regarding unemployment including an unemployment compensation, training possibilities and guidance in searching for another job, which may (to some extent) compensate for the lost

benefits of work (e.g., Sousa Ribeiro, 2013). The findings of this study might suggest that policy makers should already invest in informing job-insecure workers and should not wait until individuals are unemployed. As there might be a risk that the action of informing employees about support systems in case of unemployment may induce feelings of job insecurity, we believe it is important to inform employees independently of their work place or employer, thus on a higher regional or national level. In this way, employees may not interpret this action as a forerunner of the loss of their job.

Practical suggestions can also be made for the individual employee. When having serious concerns about the existence of one's job in the future, an employee may proactively look for information on available support systems that can compensate for the loss of the benefits of work in the eventual case of job loss (e.g., "What would be my unemployment compensation?"; "Are there family member who could support me in case of job loss?"). Highly job-insecure employees may possibly also want to look for alternative, more secure job options to ensure the manifest and latent benefits of work also in the future.

Conclusion

This study highlights intra-personal processes underlying the effect of job insecurity on future health complaints. It demonstrates that simply the perception of *threats* to the manifest and latent benefits accounted for the job insecurity−health complaints relationship. As such, it adds to the finding of previous studies that the actual deprivation of the benefits of work negatively affects employees' health (e.g., Selenko & Batinic, 2013). More generally, the present study demonstrates that the Latent Deprivation Model (Jahoda, 1982) is not only a meaningful framework in understanding health complaints among unemployed individuals, but may also function as a basis to account for health complaints among employees feeling insecure about their current employment situation. In addition, this study highlights the

exacerbating role of financial resources in the indirect relationship between job insecurity and health complaints through threat to the manifest benefit.

References

Aiken, L. S., & West S. G. (1991). *Multiple Regression: Testing and Interpreting Interactions*. Newbury Park, CA: Sage.

Bliese, P. D., & Ployhart, R. E. (2002). Growth modeling using random coefficient models: Model building, testing and illustrations. *Organizational Research Methods, 5*(4), 362–387. DOI: 10.1177/109442802237116

Berwick, D. M., Murphy, J. M., Goldman, P. A., Ware, J. E., Barsky, A. J., & Weinstein, M. C. (1991). Performance of a five-item mental health screening test. *Medical Care*, 29(2), 169−176. doi:10.1097/00005650-199102000-00008

Carstensen, L. L., Fung, H., & Charles, S. (2003). Socioemotional selectivity theory and the regulation of emotion in the second half of life. *Motivation and Emotion, 27*(2), 103–123. doi:10.1023/A:1024569803230

Cheng, G. H. L., & Chan, D. K. S. (2008). Who suffers more from job insecurity? A meta-analytic review. *Applied Psychology: An International Review, 57*(2), 272–303. doi:10.1111/j.1464-0597.2007.00312.x

Conens, W. S., Henkens, K., & Schippers, J. (2012). Employers attitudes and actions towards the extension of working lives in Europe. *International Journal of Manpower, 33*(6), 648–665. doi:10.1108/01437721211261804

Conway, J. M., & Lance, C. E. (2010). What reviewers should expect from authors regarding common method bias in organizational research. *Journal of Business and Psychology, 25*(3), 325–334. doi:10.1007/s10869-010-9181-6

De Cuyper, N., & De Witte, H. (2007). Job insecurity in temporary versus permanent workers: Associations with attitudes, well-being, and behaviour. *Work & Stress, 21*(1), 65–84. doi:10.1080/02678370701229050

de Lange, A. H. (2005). *What about causality? Examining longitudinal relations between*

work characteristics and mental health. Ridderprint BV: Ridderkerk.

De Witte, H. (2000). Arbeidsethos en jobonzekerheid: Meting en gevolgen voor welzijn, tevredenheid en inzet op het werk [Work ethic and job insecurity: Assessment and consequences for well-being, satisfaction and performance at work]. In R. Bouwen, K. De Witte, H. De Witte, & T. Taillieu (Eds.), *Van groep naar gemeenschap* [From group to community]. *Liber Amicorum Prof. Dr. Leo Lagrou* (pp. 325−350). Leuven: Garant.

De Witte, H. (1999). Job insecurity and psychological well-being: Review of the literature and exploration of some unresolved issues. *European Journal of Work and Organizational Psychology, 8*(2), 155–177. doi:10.1080/135943299398302

De Witte, H., Vander Elst, T., & De Cuyper, N. (in press). Job insecurity, health and well-being. In J. Vuori, R. Blonk, & R. H. Price (Eds.), *Sustainable Working Lives: Managing Work Transitions and Health Throughout the Life Course*. New York: Springer.

Duncan, T., Duncan, S., & Strycker, L. (2006). *An introduction to latent variable growth curve modeling*. Marwah, NJ: Lawrence Erlbaum Associates.

Dyer, N. G., & Hanges, P. J., & Hall, R. J. (2005). Applying multilevel confirmatory factor analysis techniques to the study of leadership. *Leadership Quarterly, 16,* 149–167. DOI:10.1016/j.leaqua.2004.09.009.

Griep, Y., Vantilborgh, T., & Pepermans, R. (2014, May). *Psychological contract breach and counterproductive work behavior: A dynamic model*. Paper presented at the 29th Annual Conference of the Society for Industrial and Organizational Psychology, Honolulu, Hawaii.

Hayes, A. (2006). A primer on multilevel modeling. *Human Communication Research, 32*(4), 385–410. doi:10.1111/j.1468-2958.2006.00281.x

Hellgren, J., Sverke, M, & Isaksson, K. (1999). A two-dimensional approach to job insecurity: Consequences for employee attitudes and well-being. *European Journal of Work and*

Organizational Psychology, 8(2), 179–195. doi:10.1080/135943299398311

Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review, 50*(3), 337–421. doi:10.1111/1464-0597.00062

Hox, J. J. (2010). Multilevel analysis: Techniques and applications (2nd ed.). New York, NY: Routledge.

Jahoda, M. (1982). *Employment and unemployment. A social-psychological analysis*. Cambridge, England, UK: Cambridge University Press.

Lazarus, R. S., & Folkman, S. (1984). *Stress appraisal and coping*. NY: Springer.

MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. Mahwah, NJ: Lawrence Erlbaum Associates.

McLoyd, V., Jayaratne, T. E., Ceballo, R., & Borquez, J. (1994). Unemployment and work interruption among African American single mothers: Effects on parenting and adolescent socioemotional functioning. *Child Development, 65*(2), 562–589. doi:10.1111/j.1467-8624.1994.tb00769.x

Meireman, K., Meuleman, B., Billiet, J., De Witte, H. & Wets, J. (2004). *Tussen aanvaarding en weerstand. Een sociologisch onderzoek naar houdingen tegenover asiel, opvang en migratie* [Between exceptance and resistance: A sociological study on the attitudes towards asylum, shelter and migration]. Gent, Belgium: Academia Press.

Muller, J., Creed, P. A., Waters, L., & Machin, M. A. (2005). The development and preliminary testing of a scale to measure the latent and manifest benefits of employment. *European Journal of Psychological Assessment, 21*(3), 191–198. doi:10.1027/1015-5759.21.3.191

Muthén, L. K., & Muthén, B. O. (2013). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Otto, K., & Dalbert, C. (2013). Are insecure jobs as bad for mental health and occupational commitment as unemployment? Equal threat or downward spiral. *Horizons of Psychology, 22*, 27–38.

Paul, K. I., Geithner, E., & Moser, K. (2009). Latent deprivation among people who are employed, unemployed, or out of the labor force. *Journal of Psychology, 143*, 477–491. doi:10.3200/JRL.143.5.477-491

Pienaar, J., De Witte, H., Hellgren, J., & Sverke, M. (2013). The cognitive/affective distinction of job insecurity: Validation and differential relations. *Southern African Business Review, 17*(2), 1–22.

Preacher, K. J., Zyphur, M. J., & Zhang, Z. (2010). A general multilevel SEM framework for assessing multilevel mediation. *Psychological Methods, 15*, 209–233. doi:10.1037/a0020141

Price, R. H., Choi, J. N., & Vinokur, A. D. (2002). Links in the chain of adversity following job loss: How financial strain and loss of personal control lead to depression, impaired functioning, and poor health. *Journal of Occupational Health Psychology, 7*(4), 302–312. doi:10.1037/1076-8998.7.4.302

Reisel, W. D. (2003). Validation and measurement of perceived environmental threat as an antecedent to job insecurity. *Psychological Reports, 93*(2), 359–364.

Selenko, E., & Batinic, B. (2013). Job insecurity and the benefits of work. *European Journal of Work and Organizational Psychology, 22*(6), 725–736. doi:10.1080/1359432X.2012.703376

Selenko, E., Batinic, B., & Paul, K. I. (2011). Does latent deprivation lead to psychological distress? Investigating Jahoda's model in a four-wave study. *Journal of Occupational and Organizational Psychology, 84*, 723–740. doi:10.1348/096317910X519360

Singer, J. D., & Willet, J. B. (2003). *Applied longitudinal data analysis: Modeling change*

and event occurrence. New York: Oxford University Press.

Sousa Ribeiro, M. C. L. (2013). *Too old for work, too young for retirement: the psychosocial experience of unemployment among older adults* (Doctoral dissertation). Retrieved from http://repositorio-aberto.up.pt/bitstream/10216/71725/2/81835.pdf

Srivastava, S., John, O. P., Gosling, S. D., & Potter, J. (2003). Development of personality in early and middle adulthood: Set like plaster or persistent change? *Journal of Personality and Social Psychology, 84*(5), 1041–1053. doi:0.1037/0022-3514.84.5.1041

Sverke, M., Hellgren, J., & Näswall, K. (2002). No security: A meta-analysis and review of job insecurity and its consequences. *Journal of Occupational Health Psychology, 7*(3), 242−264. doi:10.1037/1076-8998.7.3.242

Taris, T., & Kompier, M. (2014). Cause and effect: Optimizing the designs of longitudinal studies in occupational health psychology. *Work & Stress, 28*(1), 1−8. doi:10.1080/02678373.2014.878494

Vander Elst, T., De Witte, H., & De Cuyper, N. (2014). The Job Insecurity Scale: A psychometric evaluation across five European countries. *European Journal of Work and Organizational Psychology, 23*(3), 364−380. doi:10.1080/1359432X.2012.745989

Vander Elst, T., Van den Broeck, A., De Cuyper, N., De Witte, H. (2014). On the reciprocal relationship between job insecurity and employee well-being: Mediation by perceived control? *Journal of Occupational and Organizational Psychology*. Advance online publication. doi:10.1111/joop.12068

Virtanen, P., Vahtera, J., Kivimäki, M., Pentti, J., & Ferrie, J. (2002). Employment security and health. *Journal of Epidemiology & Community Health, 56*(8), 569−574. doi:10.1136/jech.56.8.569

Voelkle, M. C., Brose, A., Schmiedek, F., & Lindenberger, U. (2014). Toward a unified framework for the study of between-person and within-person structures: building a

bridge between two research paradigms. *Multivariate Behavioral Research, 49*(3), 193–213. doi: 10.1080/00273171.2014.889593

Ware, J. E. (1999). SF-36 Health Survey. In M. E. Maruish (Ed.), *The use of psychological testing for treatment planning and outcomes assessment* (2nd ed.) (pp. 1227−1246). Mahwah, NJ, US: Lawrence Erlbaum Associates.

Table 1

Means, Standard Deviations, and Correlation Matrix at the Between-Person Level (Below the Diagonal), as well as Correlation Matrix at the Within-Person Level (Above the Diagonal)

Variable	*M*	*SD*	1	2	3	4	5	6
1. Job insecurity	2.17	0.89	-	.20***	.23***	.14***	.05**	-.02
2. Threat to manifest benefit	3.08	0.85	.33***	-	.30***	.06**	.07***	-.10***
3. Threat to latent benefits	2.24	0.59	.45***	.55***	-	.21***	.17***	-.03
4. Mental health complaints	2.82	0.76	.22***	.33***	.44***	-	.24***	-.01
5. Physical health complaints	2.25	0.74	.18***	.27***	.35***	.45***	-	-.03
6. Financial resources	3.36	0.62	-.17***	- .50***	-.33***	-.26***	-.21***	-

** p < .05; ** p < .01; *** p < .001.*

Table 2

Summary of the Moderated Mediation Analyses: Conditional Indirect Effects of Job Insecurity on Mental and Physical Health Complaints through Threat to the Manifest Benefit of Work at Different Values of the Moderator (i.e., Financial Resources)

	Outcome					
Value of	Mental Health Complaints			Physical Health Complaints		
Moderator	Indirect Effect	SE	*p*	Indirect Effect	SE	*p*
−3.5 *SD*	-.008	.011	.482	-.010	.014	.450
−3 *SD*	.000	.008	.973	.000	.011	.973
−2.5 *SD*	.005	.008	.484	.007	.010	.484
−2 *SD*	.011	.008	.182	.015	.010	.149
−1.5 *SD*	.017	.010	.095	.023	.011	.045
−1 *SD*	.022	.012	.071	.030	.013	.020
−0.5 *SD*	.028	.015	.063	.038	.015	.013
Mean	.033	.018	.062	.046	.018	.010
+0.5 *SD*	.039	.021	.062	.053	.021	.009
+1 *SD*	.045	.024	.063	.061	.023	.009

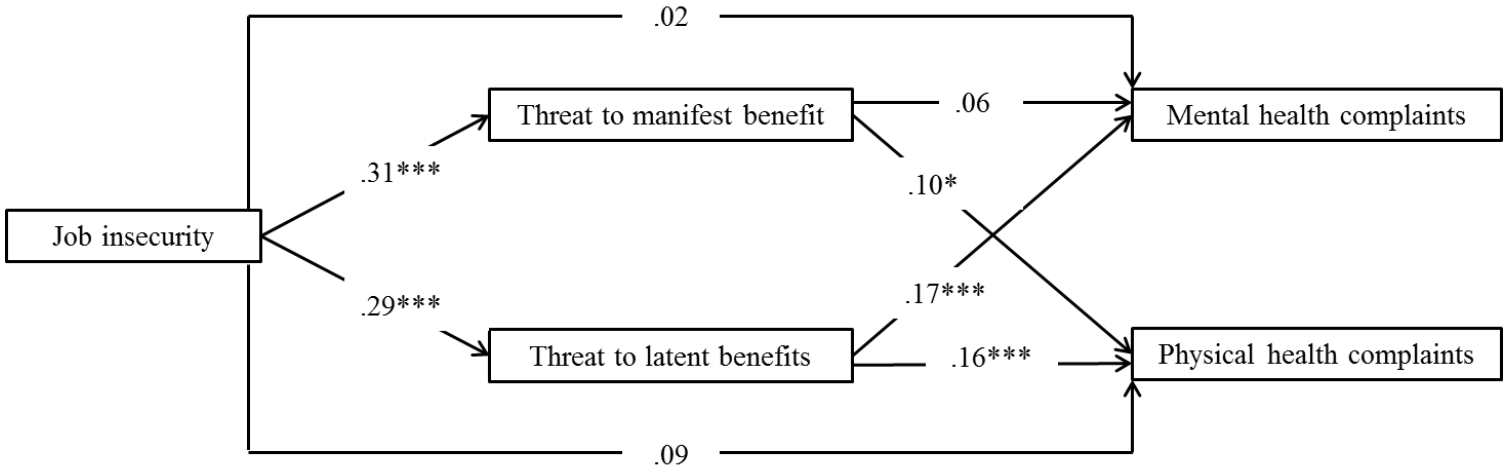

Figure 1: Mediation model with standardized path coefficients. All relationships shown in this figure concern lagged relationships, that is, relationships between exogenous variables at time T-1 and endogenous variables at time T. * $p < .05$; ** $p < .01$; *** $p < .001$.

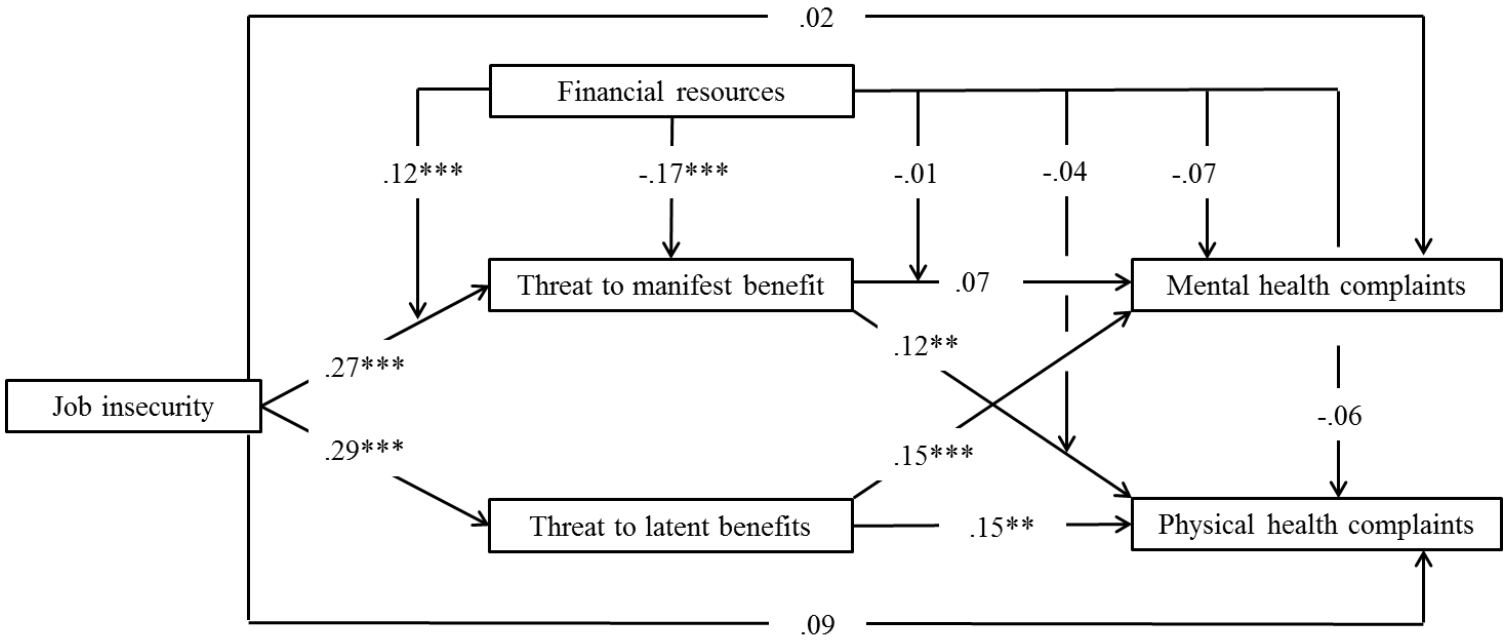

Figure 2: Moderated mediation model with standardized path coefficients. All relationships shown in this figure concern lagged relationships, that is, relationships between exogenous variables at time T-1 and endogenous variables at time T. * $p < .05$; ** $p < .01$; *** $p < .001$.

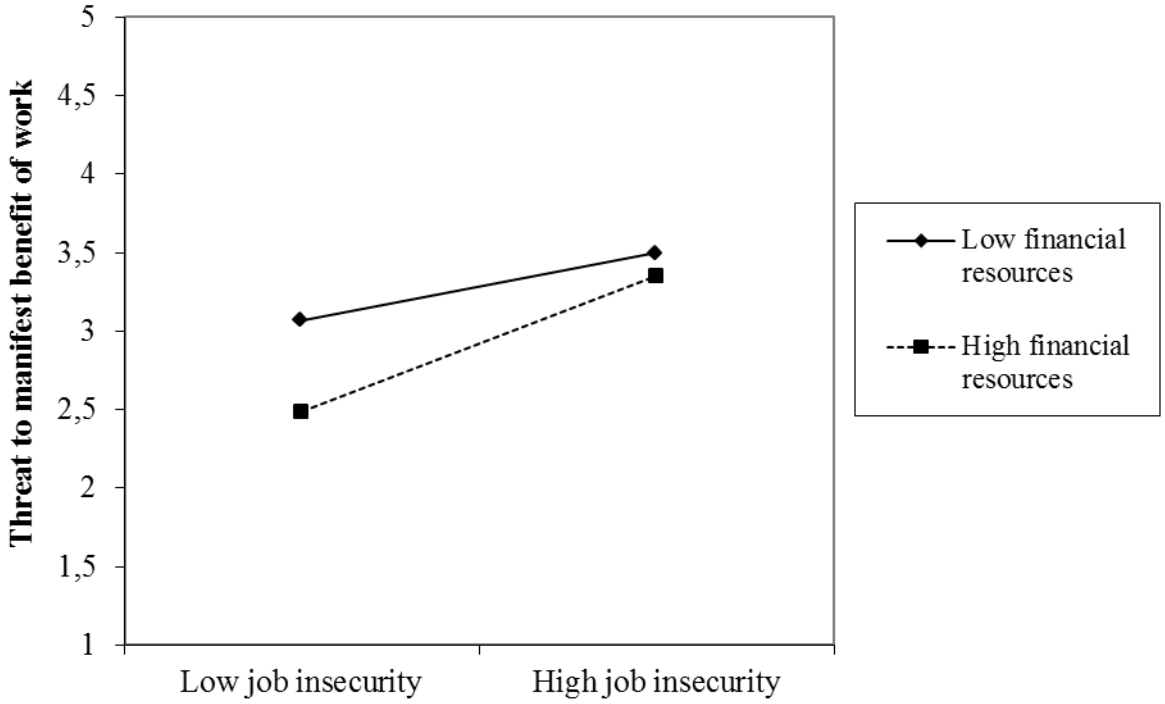

Figure 3: Interaction between time-lagged job insecurity and financial resources at time T-1 in predicting threat to manifest benefit at time T.